



TEST DATA OF PAA300F-12

(200V INPUT)

Regulated DC Power Supply

Date : Feb. 13. 1997

Approved by : J. Yoneda
Design Manager

Prepared by : J. Watanabe
Design Engineer

コーセル株式会社

COSEL CO., LTD.

CONTENTS

1. Line Regulation	1
静的入力変動	
2. Efficiency	2
効率	
3. Power Factor	3
力率	
4. Hold-Up Time	4
出力保持時間	
5. Instantaneous Interruption Compensation	5
瞬時停電保障	
6. Load Regulation	6
静的負荷変動	
7. Ripple Voltage (by Load Current)	7
リップル電圧(負荷電流特性)	
8. Ripple-Noise	8
リップルノイズ	
9. Overcurrent Protection	9
過電流保護	
10. Overvoltage Protection	10
過電圧保護	
11. Inrush Current	11
突入電流	
12. Dynamic Load Responce	12
動的負荷変動	
13. Rise and Fall Time	13
立上り、立下り時間	
14. Ambient Temperature Drift	14
周囲温度変動	
15. Minimum Input Voltage for Regulated Output Voltage	15
最低レギュレーション電圧	
16. Ripple Voltage (by Ambient Temperature)	16
リップル電圧(周囲温度特性)	
17. Time Lapse Drift	17
経時ドリフト	
18. Voltage Accuracy	18
定電圧精度	
19. Harmonic Current	19
高調波電流	
20. Condensation	21
結露特性	
21. Leakage Current	22
漏洩電流	
22. Line Noise Tolerance	23
入力雑音耐量	
23. Conducted Emission	24
雑音端子電圧	
24. Figure of Testing Circuitry	25
測定回路図	

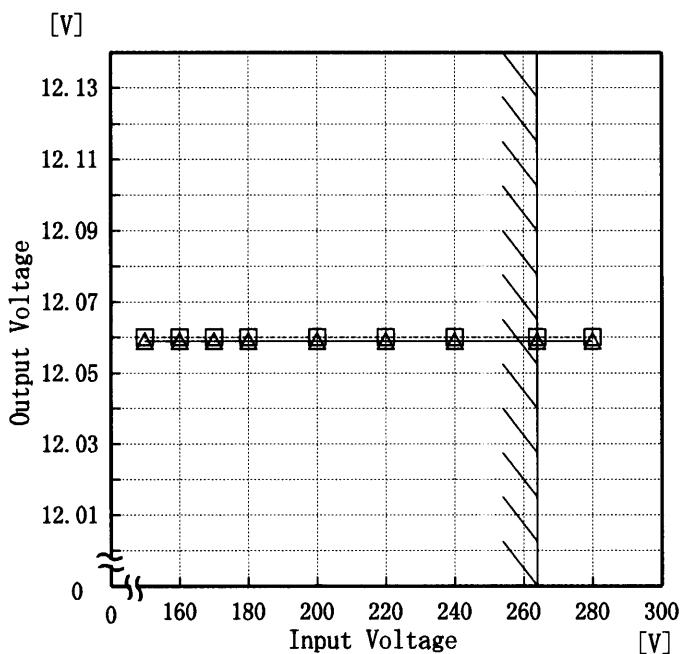


Model	PAA300F-12
Item	Line Regulation 静的入力変動
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

-----□----- Load 50%
-----△----- Load 100%



Note: Slanted line shows the range of the rated input voltage.

(注)斜線は定格入力電圧範囲を示す。

2. Values

Input Voltage [V]	Load 50%	Load 100%
	Output Volt. [V]	Output Volt. [V]
150	12.060	12.059
160	12.060	12.059
170	12.060	12.059
180	12.060	12.059
200	12.060	12.059
220	12.060	12.059
240	12.060	12.059
264	12.060	12.059
280	12.060	12.059

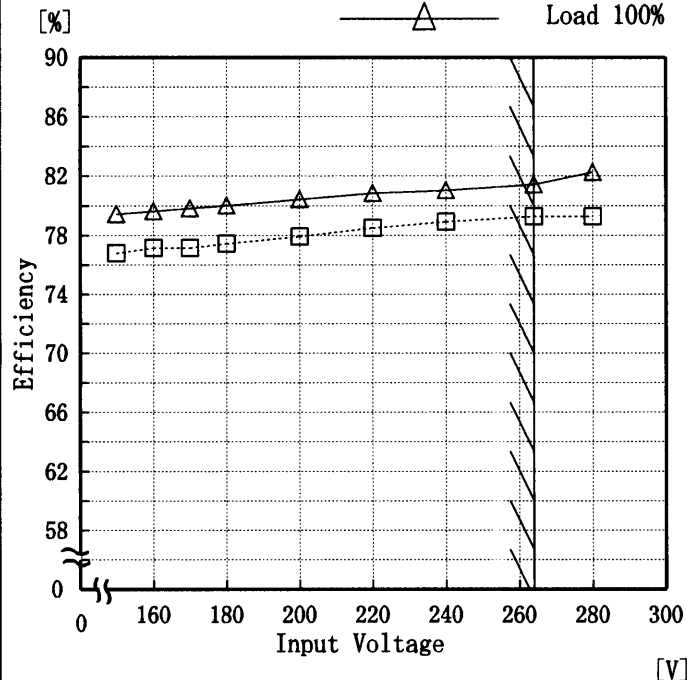


Model	PAA300F-12
Item	Efficiency 効率
Object	_____

Temperature 25°C
Testing Circuitry Figure A

1. Graph

-----□----- Load 50%
-----△----- Load 100%



Note: Slanted line shows the range of the rated input voltage.

(注) 斜線は定格入力電圧範囲を示す。

2. Values

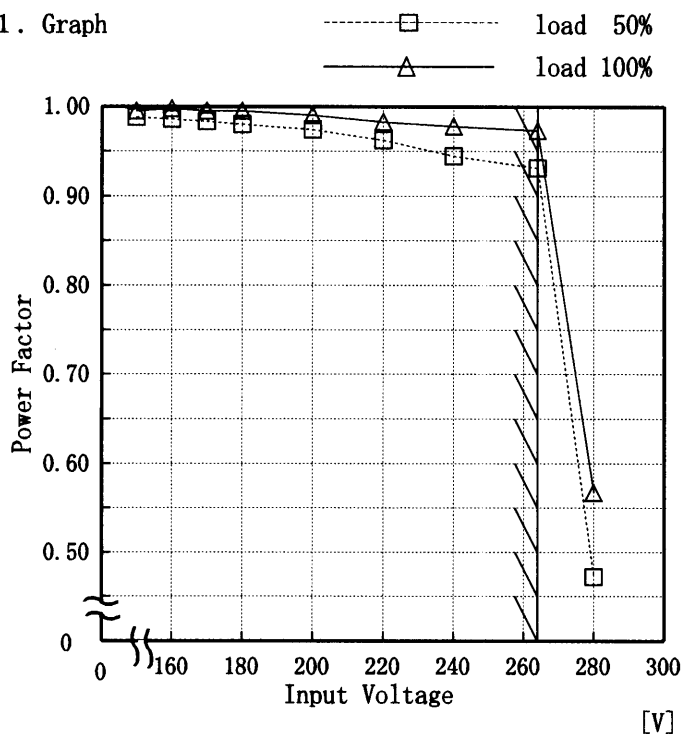
Input Voltage [V]	Load 50%	Load 100%
	Efficiency [%]	Efficiency [%]
150	76.80	79.44
160	77.16	79.64
170	77.16	79.84
180	77.43	80.03
200	77.91	80.43
220	78.52	80.84
240	78.91	81.04
264	79.29	81.45
280	79.29	82.28



Model	PAA300F-12
Item	Power Factor 力率
Object	_____

Temperature 25°C
Testing Circuitry Figure A

1. Graph



2. Values

Input Voltage [V]	load 50%	load 100%
	Power Factor	Power Factor
150	0.99	1.00
160	0.99	1.00
170	0.98	1.00
180	0.98	1.00
200	0.97	0.99
220	0.96	0.98
240	0.94	0.98
264	0.93	0.97
280	0.47	0.57

Note: Slanted line shows the range of the rated input voltage.

(注) 斜線は定格入力電圧範囲を示す。



<p>Model PAA300F-12</p>		<p>Temperature 25°C Testing Circuitry Figure A</p>																																
Item	Hold-Up Time 出力保持時間																																	
Object	+12V27A	<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Input Voltage [V]</th> <th>Load 50%</th> <th>Load 100%</th> </tr> <tr> <th>Hold-Up Time [mS]</th> <th>Hold-Up Time [mS]</th> </tr> </thead> <tbody> <tr><td>150</td><td>98</td><td>46</td></tr> <tr><td>160</td><td>98</td><td>47</td></tr> <tr><td>170</td><td>99</td><td>47</td></tr> <tr><td>180</td><td>99</td><td>48</td></tr> <tr><td>200</td><td>100</td><td>48</td></tr> <tr><td>220</td><td>101</td><td>49</td></tr> <tr><td>240</td><td>101</td><td>49</td></tr> <tr><td>264</td><td>101</td><td>50</td></tr> <tr><td>280</td><td>102</td><td>48</td></tr> </tbody> </table>	Input Voltage [V]	Load 50%	Load 100%	Hold-Up Time [mS]	Hold-Up Time [mS]	150	98	46	160	98	47	170	99	47	180	99	48	200	100	48	220	101	49	240	101	49	264	101	50	280	102	48
Input Voltage [V]	Load 50%			Load 100%																														
	Hold-Up Time [mS]	Hold-Up Time [mS]																																
150	98	46																																
160	98	47																																
170	99	47																																
180	99	48																																
200	100	48																																
220	101	49																																
240	101	49																																
264	101	50																																
280	102	48																																
<p>1. Graph</p> <p>Legend: □ Load 50% △ Load 100%</p>																																		
<p>This duration covers from Shut-off of input voltage to the moment when output voltage descends to the rated range of voltage accuracy.</p> <p>Note: Slanted line shows the range of the rated input voltage.</p> <p>出力保持時間とは、AC入力断から出力電圧が、定電圧精度の規格範囲を保持しているところまでの時間。 (注)斜線は定格入力電圧範囲を示す。</p>																																		

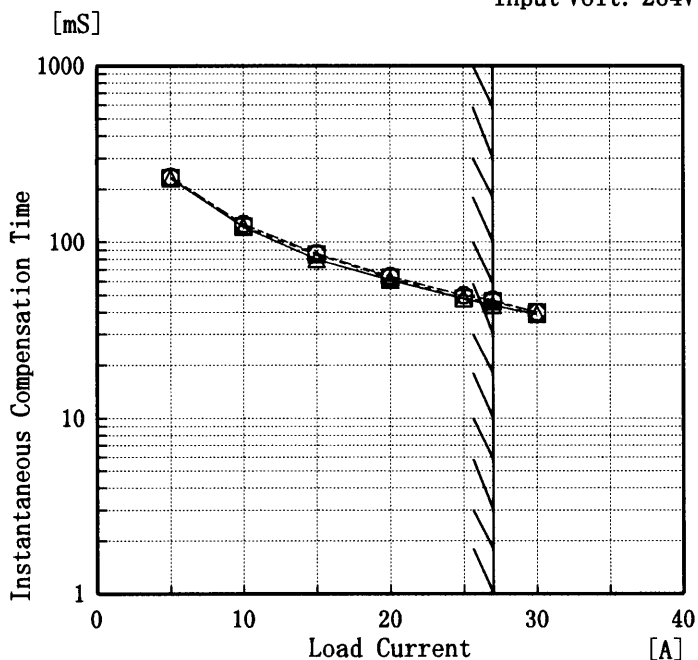


Model	PAA300F-12
Item	Instantaneous Interruption Compensation 瞬時停電保障
Object	+12V27A

Testing Circuitry Figure A 25°C

1. Graph

- △— Input Volt. 170V
- Input Volt. 200V
- Input Volt. 264V



This duration covers from Shut-off of AC-IN to the moment when output voltage descends to its 95% of the rated.

Note: Slanted line shows the range of the rated load current.

瞬時停電保障時間とは、出力電圧が定格値の95%になる時の瞬時停電時間をいう。

(注)斜線は定格負荷電流範囲を示す。

2. Values

Load Current [A]	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
	Time [mS]		
0.0	—	—	—
5.0	230	231	235
10.0	122	123	127
15.0	80	85	86
20.0	61	63	64
25.0	48	48	50
27.0	44	46	47
30.0	39	40	40
—	—	—	—
—	—	—	—
—	—	—	—

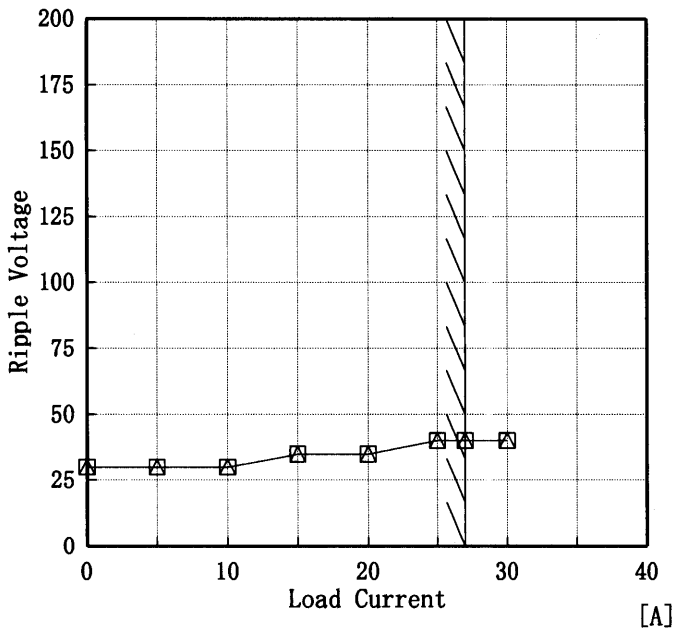


Model		PAA300F-12		Temperature		25°C																																																
Item		Load Regulation 静的負荷変動		Testing Circuitry		Figure A																																																
Object		+12V27A																																																				
<p>1. Graph</p> <p>—△— Input Volt. 170V - - -□- - - Input Volt. 200V - - -○- - - Input Volt. 264V</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>(注)斜線は定格負荷電流範囲を示す。</p>				<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load Current [A]</th> <th>Input Volt. 170[V]</th> <th>Input Volt. 200[V]</th> <th>Input Volt. 264[V]</th> </tr> <tr> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> <th>Output Volt. [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>12.063</td><td>12.063</td><td>12.063</td></tr> <tr><td>5.0</td><td>12.062</td><td>12.062</td><td>12.062</td></tr> <tr><td>10.0</td><td>12.061</td><td>12.061</td><td>12.061</td></tr> <tr><td>15.0</td><td>12.061</td><td>12.061</td><td>12.061</td></tr> <tr><td>20.0</td><td>12.060</td><td>12.060</td><td>12.060</td></tr> <tr><td>25.0</td><td>12.060</td><td>12.060</td><td>12.060</td></tr> <tr><td>27.0</td><td>12.060</td><td>12.060</td><td>12.060</td></tr> <tr><td>30.0</td><td>12.059</td><td>12.059</td><td>12.059</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>				Load Current [A]	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]	0.0	12.063	12.063	12.063	5.0	12.062	12.062	12.062	10.0	12.061	12.061	12.061	15.0	12.061	12.061	12.061	20.0	12.060	12.060	12.060	25.0	12.060	12.060	12.060	27.0	12.060	12.060	12.060	30.0	12.059	12.059	12.059	—	—	—	—	—	—	—	—
Load Current [A]	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]																																																			
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]																																																			
0.0	12.063	12.063	12.063																																																			
5.0	12.062	12.062	12.062																																																			
10.0	12.061	12.061	12.061																																																			
15.0	12.061	12.061	12.061																																																			
20.0	12.060	12.060	12.060																																																			
25.0	12.060	12.060	12.060																																																			
27.0	12.060	12.060	12.060																																																			
30.0	12.059	12.059	12.059																																																			
—	—	—	—																																																			
—	—	—	—																																																			



Model	PAA300F-12	Temperature	25°C
Item	Ripple Voltage (by Load Current) リップル電圧 (負荷電流特性)	Testing Circuitry	Figure A
Object	+12V27A		

1. Graph
 [mV] □-----□----- Input Volt. 170V
 —△———△——— Input Volt. 264V



Ripple Voltage is shown as p-p in the figure below.

Note: Slanted line shows the range of the rated load current.

リップル電圧は、下図 p-p 値で示される。
 (注) 斜線は定格負荷電流範囲を示す。

T1: Due to AC Input Line
 入力商用周期
 T2: Due to Switching
 スイッチング周期

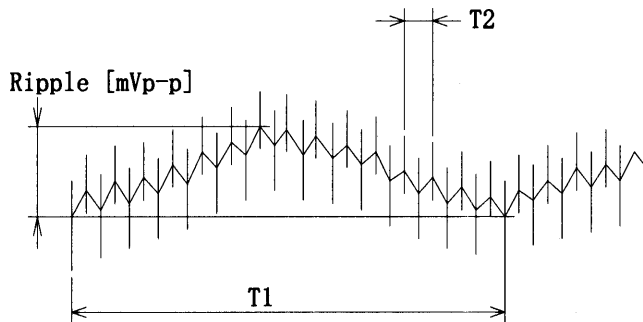


Fig. Complex Ripple Wave Form
 図 リップル波形詳細図

2. Values

Load Current [A]	Input Volt. 170 [V]	Input Volt. 264 [V]
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
0.0	30	30
5.0	30	30
10.0	30	30
15.0	35	35
20.0	35	35
25.0	40	40
27.0	40	40
30.0	40	40
—	—	—
—	—	—
—	—	—



Model		PAA300F-12		Temperature		25°C																																							
Item		Ripple-Noise リップルノイズ		Testing Circuitry		Figure A																																							
Object		+12V27A																																											
<p>1. Graph</p> <p>[mV]</p> <p>-----□----- Input Volt. 170V</p> <p>-----△----- Input Volt. 264V</p> <p>Ripple-Noise</p> <p>Load Current [A]</p>				<p>2. Values</p> <table border="1"> <thead> <tr> <th rowspan="2">Load current [A]</th> <th>Input Volt. 170 [V]</th> <th>Input Volt. 264 [V]</th> </tr> <tr> <th>Ripple-Noise [mV]</th> <th>Ripple-Noise [mV]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>30</td><td>30</td></tr> <tr><td>5.0</td><td>35</td><td>35</td></tr> <tr><td>10.0</td><td>40</td><td>40</td></tr> <tr><td>15.0</td><td>45</td><td>45</td></tr> <tr><td>20.0</td><td>50</td><td>50</td></tr> <tr><td>25.0</td><td>55</td><td>55</td></tr> <tr><td>27.0</td><td>60</td><td>60</td></tr> <tr><td>30.0</td><td>65</td><td>65</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> <tr><td>—</td><td>—</td><td>—</td></tr> </tbody> </table>				Load current [A]	Input Volt. 170 [V]	Input Volt. 264 [V]	Ripple-Noise [mV]	Ripple-Noise [mV]	0.0	30	30	5.0	35	35	10.0	40	40	15.0	45	45	20.0	50	50	25.0	55	55	27.0	60	60	30.0	65	65	—	—	—	—	—	—	—	—	—
Load current [A]	Input Volt. 170 [V]	Input Volt. 264 [V]																																											
	Ripple-Noise [mV]	Ripple-Noise [mV]																																											
0.0	30	30																																											
5.0	35	35																																											
10.0	40	40																																											
15.0	45	45																																											
20.0	50	50																																											
25.0	55	55																																											
27.0	60	60																																											
30.0	65	65																																											
—	—	—																																											
—	—	—																																											
—	—	—																																											
<p>Ripple-Noise is shown as p-p in the figure below.</p> <p>Note: Slanted line shows the range of the rated load current.</p> <p>リップルノイズは、下図 p-p 値で示される。</p> <p>(注) 斜線は定格負荷電流範囲を示す。</p> <p>T1: Due to AC Input Line 入力商用周期</p> <p>T2: Due to Switching スイッチング周期</p> <p>Ripple-Noise [mVp-p]</p>																																													
<p>Fig. Complex Ripple Wave Form</p> <p>図 リップル波形詳細図</p>																																													



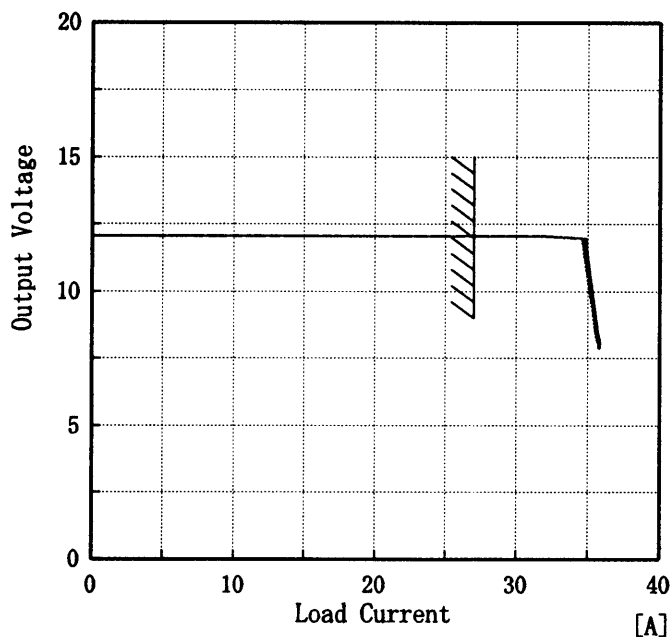
Model	PAA300F-12
Item	Overcurrent Protection 過電流保護
Object	+12V27A

Temperature 25°C
Testing Circuitry Figure A

1. Graph

[V]

————— Input Volt. 170 V
 ————— Input Volt. 200 V
 ————— Input Volt. 264 V



Note: Slanted line shows the range of the rated load current.

(注) 斜線は定格負荷電流範囲を示す。
8V以下は間欠モードにはいる。

2. Values

Output Voltage [V]	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
	Load Current [A]	Load Current [A]	Load Current [A]
12.00	34.57	34.76	34.81
11.40	34.68	34.85	34.90
10.80	34.86	35.01	35.06
9.60	35.17	35.30	35.35
8.40	35.49	35.59	35.65
7.20	—	—	—
6.00	—	—	—
4.80	—	—	—
3.60	—	—	—
2.40	—	—	—
1.20	—	—	—
0.00	—	—	—

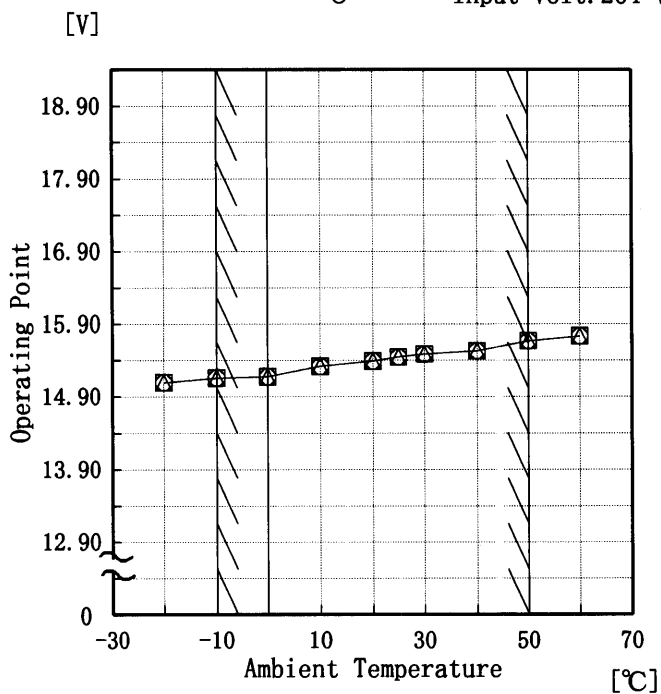


Model	PAA300F-12
Item	Overvoltage Protection 過電圧保護
Object	+12V27A

Testing Circuitry Figure A

1. Graph

- △— Input Volt. 170 V
- Input Volt. 200 V
- Input Volt. 264 V



Note: Slanted line shows the range of the rated ambient temperature.

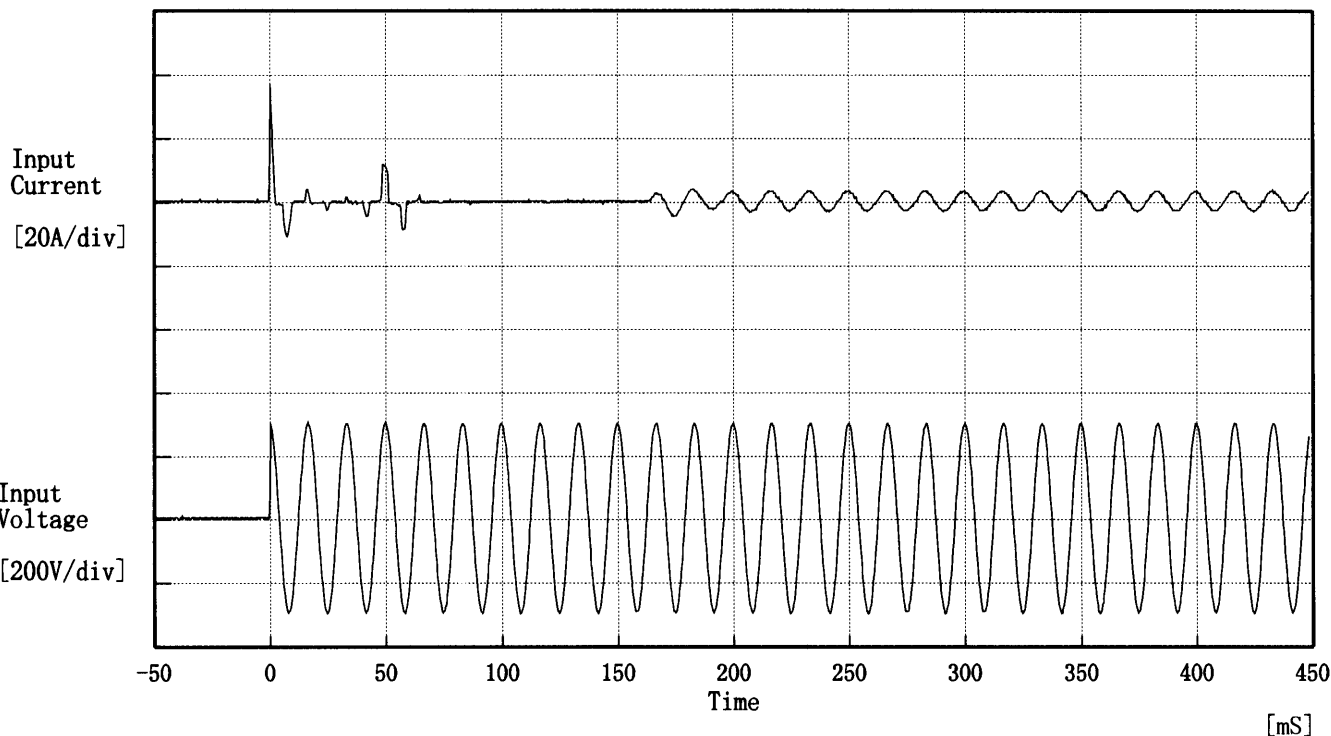
(注)斜線は定格周囲温度範囲を示す。

2. Values

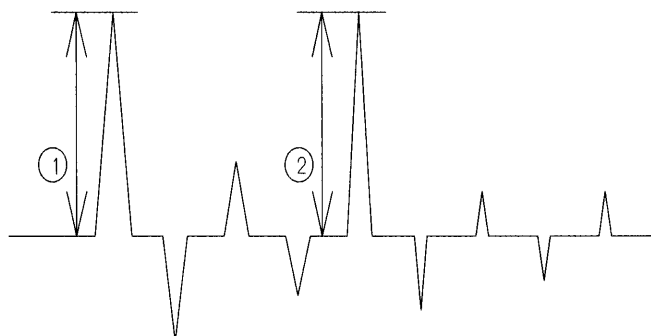
Ambient Temp. [°C]	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
	Operating Point [V]		
-20	15.10	15.10	15.10
-10	15.16	15.16	15.16
0	15.18	15.18	15.18
10	15.32	15.32	15.32
20	15.39	15.39	15.39
25	15.45	15.45	15.45
30	15.49	15.49	15.49
40	15.53	15.53	15.53
50	15.67	15.67	15.67
60	15.74	15.74	15.74
—	—	—	—



Model	PAA300F-12	Temperature 25°C Testing Circuitry Figure A
Item	Inrush Current 突入電流	
Object	_____	



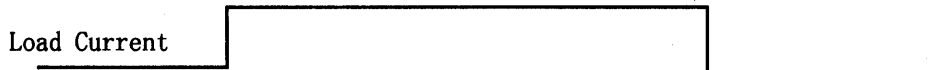
Input Voltage 200 V
 Frequency 60 Hz
 Load 100 %
 Inrush Current
 ① 37.20 [A]
 ② 10.80 [A]



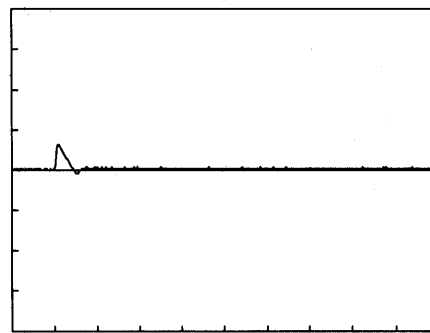
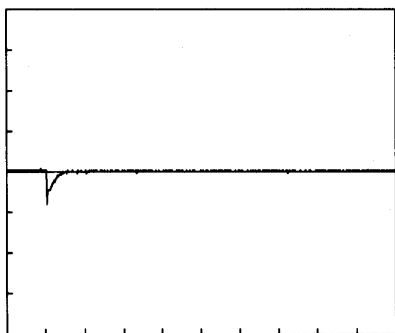


Model	PAA300F-12	Temperature 25°C Testing Circuitry Figure A
Item	Dynamic Load Responce 動的負荷変動	
Object	+12V27A	

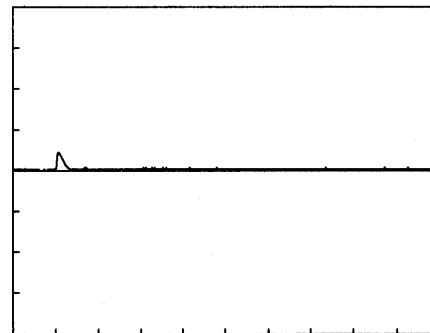
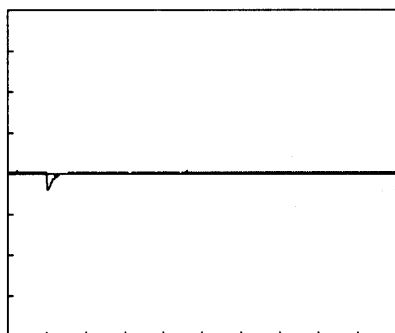
Input Volt. 200 V
Cycle 200 mS



Min. Load ↔
Load 100 %



Min. Load ↔
Load 50 %



100 mV/div

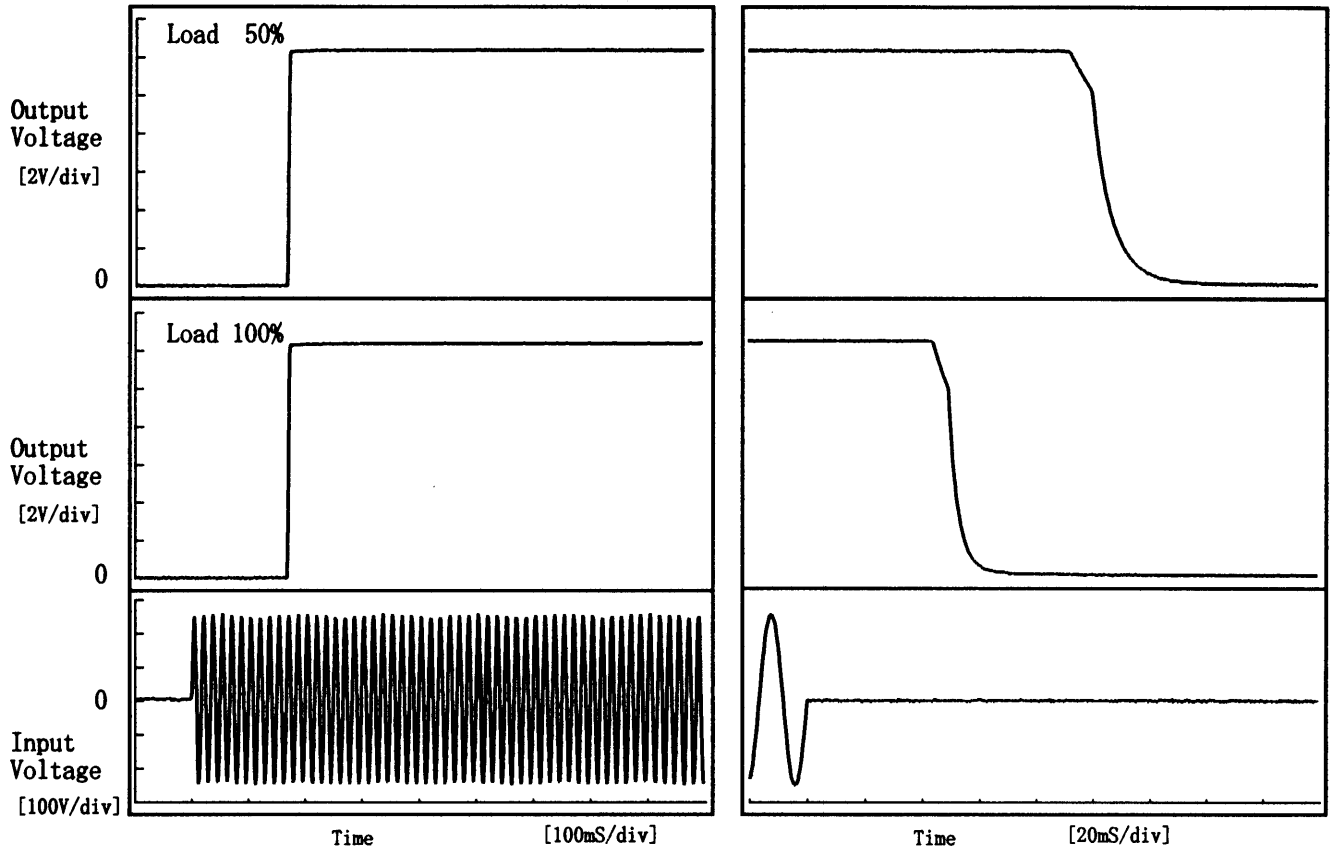
10 mS/div



Model	PAA300F-12	Temperature	25°C
Item	Rise and Fall Time 立上り、立下り時間	Testing Circuitry	Figure A
Object	+12V27A		

1. Graph

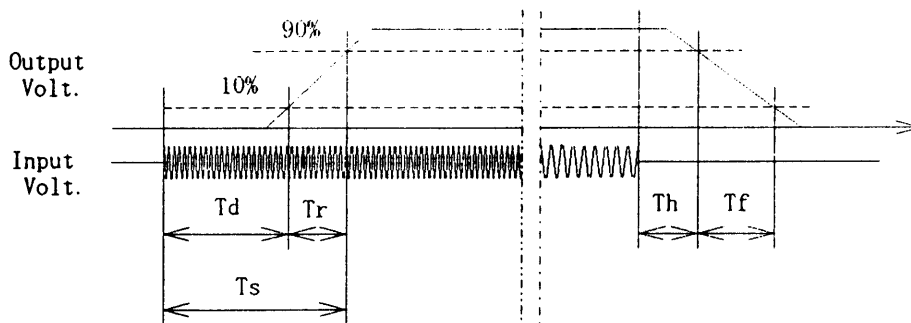
Input Volt. 170 V



2. Values

[mS]

Load \ Time	T _d	T _r	T _s	T _h	T _f
50 %	167.5	2.5	170.0	97.3	17.8
100 %	168.5	3.0	171.5	47.2	9.8



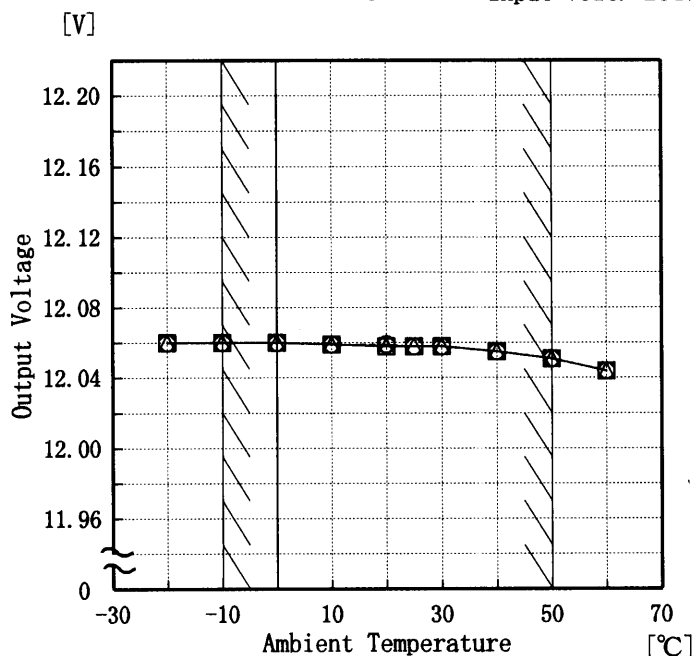


Model	PAA300F-12
Item	Ambient Temperature Drift 周囲温度変動
Object	+12V27A

Testing Circuitry Figure A

1. Graph

- △— Input Volt. 170V
- - -□- - - Input Volt. 200V
- Input Volt. 264V



Load 100%

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

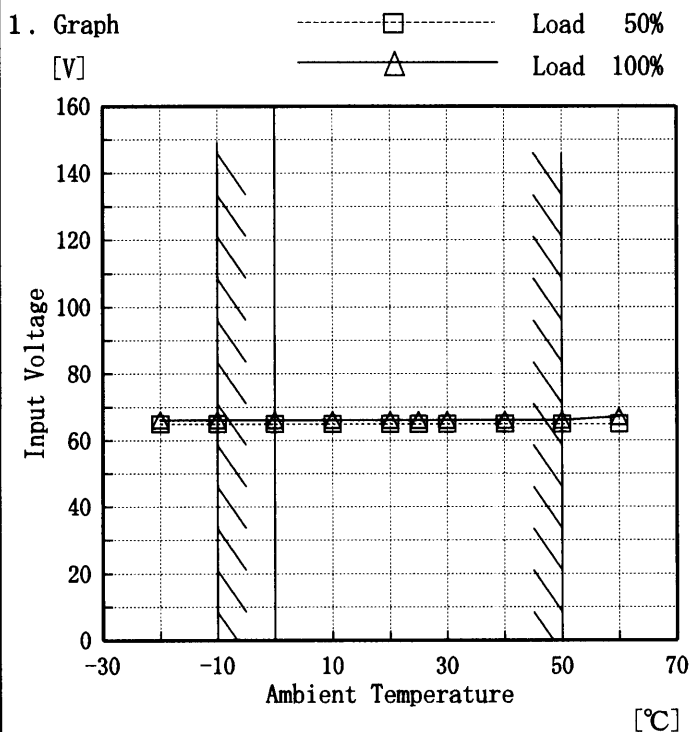
2. Values

Temperature [°C]	Input Volt. 170[V]	Input Volt. 200[V]	Input Volt. 264[V]
	Output Volt. [V]	Output Volt. [V]	Output Volt. [V]
-20	12.060	12.060	12.060
-10	12.060	12.060	12.060
0	12.060	12.060	12.060
10	12.059	12.059	12.059
20	12.058	12.058	12.059
25	12.058	12.058	12.058
30	12.058	12.058	12.058
40	12.055	12.055	12.055
50	12.051	12.051	12.051
60	12.044	12.044	12.044
—	—	—	—



Model	PAA300F-12
Item	Minimum Input Voltage for Regulated Output Voltage 最低レギュレーション電圧
Object	+12V27A

Testing Circuitry Figure A



Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

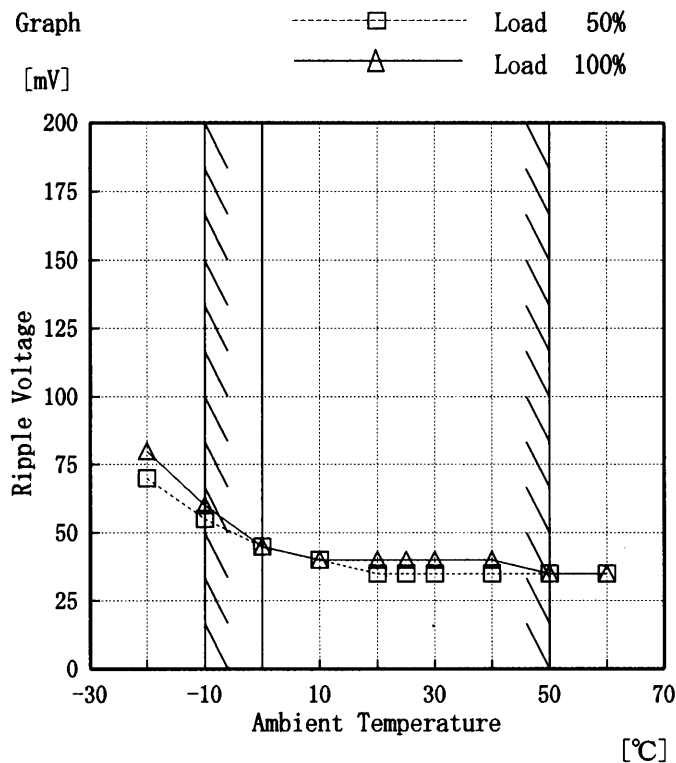
Ambient Temp. [°C]	Load 50%	Load 100%
	Input Volt. [V]	Input Volt. [V]
-20	65	66
-10	65	66
0	65	66
10	65	66
20	65	66
25	65	66
30	65	66
40	65	66
50	65	66
60	65	67
—	—	—



Model	PAA300F-12
Item	Ripple Voltage (by Ambient Temp.) リップル電圧 (周囲温度特性)
Object	+12V27A

Testing Circuitry Figure A

1. Graph



Input Volt. 200 V

Note: Slanted line shows the range of the rated ambient temperature.

(注)斜線は定格周囲温度範囲を示す。

2. Values

Ambient Temp. [°C]	Load 50%	Load 100%
	Ripple Output Volt. [mV]	Ripple Output Volt. [mV]
-20	70	80
-10	55	60
0	45	45
10	40	40
20	35	40
25	35	40
30	35	40
40	35	40
50	35	35
60	35	35
—	—	—



COSEL																								
Model	PAA300F-12																							
Item	Time Lapse Drift 経時ドリフト	Temperature 25 °C Testing Circuitry Figure A																						
Object	+12V27A																							
<p>1. Graph</p> <p>[V]</p> <p>Output Voltage</p> <p>Time [H]</p> <p>Input Volt. 200V Load 100%</p>		<p>2. Values</p> <table border="1"> <thead> <tr> <th>Time since start [H]</th> <th>Output Voltage [V]</th> </tr> </thead> <tbody> <tr><td>0.0</td><td>12.056</td></tr> <tr><td>0.5</td><td>12.053</td></tr> <tr><td>1.0</td><td>12.053</td></tr> <tr><td>2.0</td><td>12.053</td></tr> <tr><td>3.0</td><td>12.053</td></tr> <tr><td>4.0</td><td>12.053</td></tr> <tr><td>5.0</td><td>12.053</td></tr> <tr><td>6.0</td><td>12.053</td></tr> <tr><td>7.0</td><td>12.053</td></tr> <tr><td>8.0</td><td>12.053</td></tr> </tbody> </table>	Time since start [H]	Output Voltage [V]	0.0	12.056	0.5	12.053	1.0	12.053	2.0	12.053	3.0	12.053	4.0	12.053	5.0	12.053	6.0	12.053	7.0	12.053	8.0	12.053
Time since start [H]	Output Voltage [V]																							
0.0	12.056																							
0.5	12.053																							
1.0	12.053																							
2.0	12.053																							
3.0	12.053																							
4.0	12.053																							
5.0	12.053																							
6.0	12.053																							
7.0	12.053																							
8.0	12.053																							



Model		PAA300F-12	Testing Circuitry Figure A
Item		Output Voltage Accuracy 定電圧精度	
Object		+12V27A	

Output Voltage Accuracy

This is defined as the maximum value of the output voltage regulation load, temperature and input voltage vary at random in the range as specified below.

Temperature : -10~50 °C

Input Voltage : 170~264 V

Load Current : 0~27 A

* Output Voltage Accuracy = $\pm (\text{Maximum of Output Voltage} - \text{Minimum of Output Voltage}) / 2$

$$\text{Output Voltage Accuracy (Ratio)} = \frac{\text{Voltage Accuracy}}{\text{Rated Output Voltage}} \times 100$$

定電圧精度

温度、入力電圧、負荷を下記仕様内で、任意に変動させたときの出力電圧の変動をいう。

周囲温度 : -10~50 °C

入力電圧 : 170~264 V

負過電流 : 0~27 A

* 定電圧精度(変動値) = $\pm (\text{出力電圧の最高値} - \text{出力電圧の最低値}) / 2$

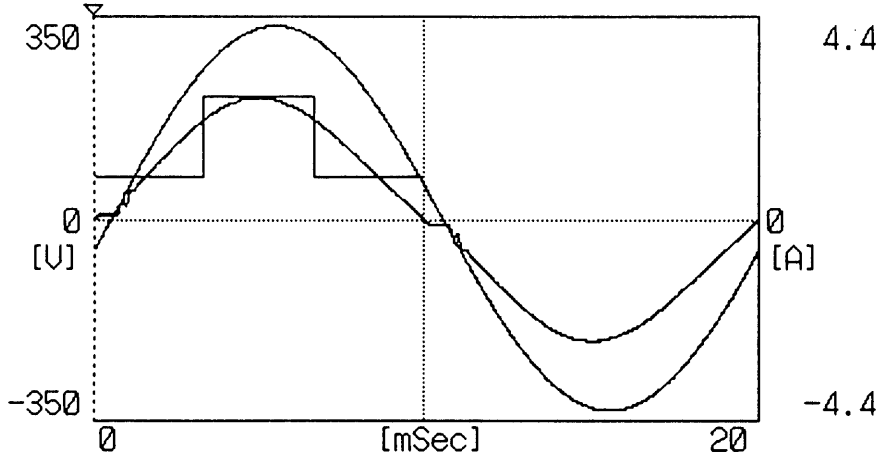
$$\text{定電圧精度(変動率)} = \frac{\text{変動値}}{\text{定格出力電圧}} \times 100$$

Item	Temperature [°C]	Input Voltage [V]	Output Current [A]	Output Voltage [V]	Output Voltage Accuracy [mV]	Output Voltage Accuracy (Ratio) [%]
Maximum Voltage	-10	264	0	12.064	±7	±0.058
Minimum Voltage	50	170	27	12.050		



Model	PAA300F-12	Temperature	25°C
Item	Harmonic Current 高調波電流	Testing Circuitry	Figure E
Object	_____		

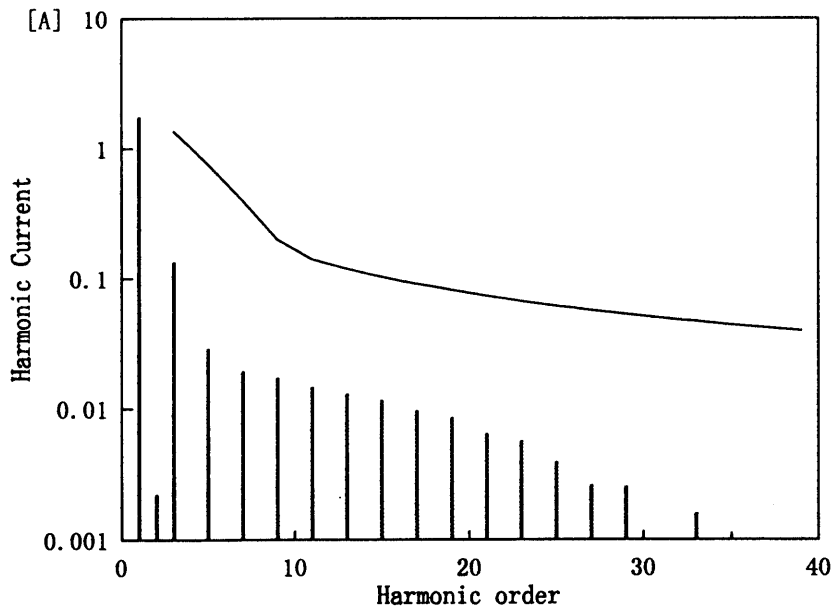
1. Input Current Waveform



Conditions	Values
Input Voltage [V]	231.5
Input Current [A]	1.76
Active Power [W]	403.7
Apparent Power [VA]	406.4
Frequency [Hz]	60
Power Factor	0.993
Output Power [W]	324

Harmonics order 高調波次数	Limits 限度値 [A]	Values 測定値 [A]
1	—	1.76800
2	—	0.00223
3	1.36369	0.13501
4	—	0.00015
5	0.76206	0.02908
6	—	0.00009
7	0.40108	0.01962
8	—	0.00004
9	0.20054	0.01733
10	—	0.00005
11	0.14038	0.01465
12	—	0.00006
13	0.11878	0.01308
14	—	0.00007
15	0.10294	0.01166
16	—	0.00007
17	0.09083	0.00968
18	—	0.00005
19	0.08127	0.00861
20	—	0.00005
21	0.07353	0.00647
22	—	0.00008
23	0.06714	0.00574
24	—	0.00006
25	0.06177	0.00394
26	—	0.00009
27	0.05719	0.00261
28	—	0.00006
29	0.05325	0.00255
30	—	0.00008
31	0.04981	0.00060
32	—	0.00007
33	0.04679	0.00160
34	—	0.00010
35	0.04412	0.00041
36	—	0.00010
37	0.04173	0.00101
38	—	0.00009
39	0.03959	0.00032
40	—	0.00007

2. Harmonic Current

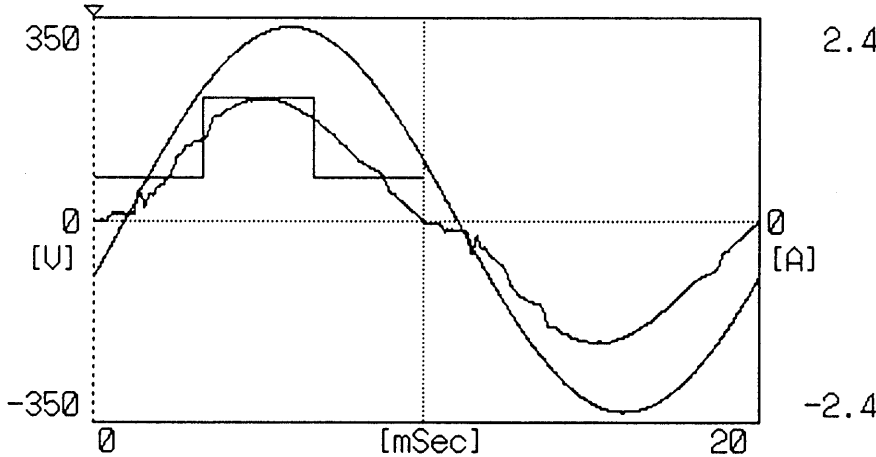


— Harmonic Current
 高調波電流
 - - - Limits for Class D equipment
 クラスDの機器に対する限度値



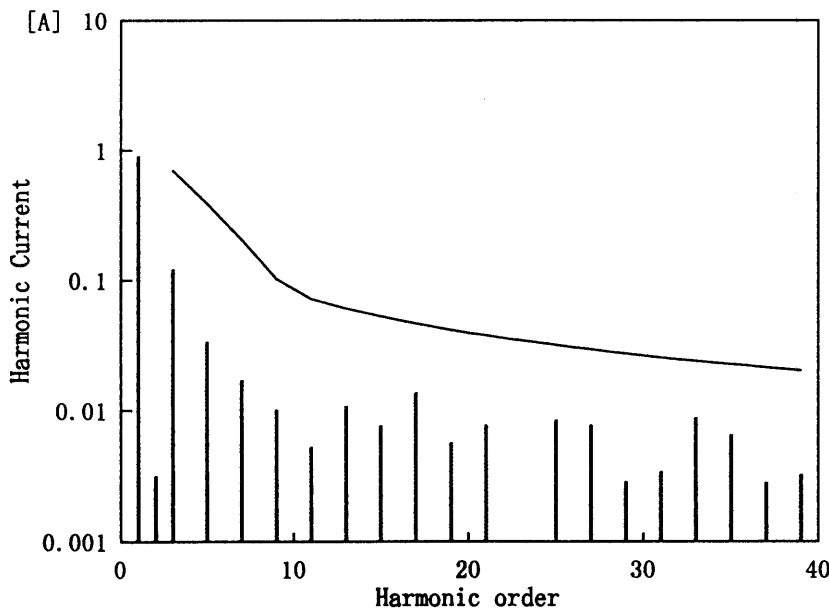
Model		PAA300F-12	Temperature		25°C
Item		Harmonic Current 高調波電流	Testing Circuitry		Figure E
Object					

1. Input Current Waveform



Conditions	Values
Input Voltage [V]	231.7
Input Current [A]	0.92
Active Power [W]	208.4
Apparent Power [VA]	213.4
Frequency [Hz]	60
Power Factor	0.977
Output Power [W]	162

2. Harmonic Current



— Harmonic Current
 高調波電流
 - - - Limits for Class D equipment
 クラスDの機器に対する限度値

Harmonics order 高調波次数	Limits 限度値 [A]	Values 測定値 [A]
1	—	0.91204
2	—	0.00319
3	0.70336	0.12275
4	—	0.00021
5	0.39305	0.03395
6	—	0.00024
7	0.20687	0.01738
8	—	0.00008
9	0.10344	0.01033
10	—	0.00020
11	0.07240	0.00531
12	—	0.00047
13	0.06127	0.01092
14	—	0.00045
15	0.05310	0.00771
16	—	0.00073
17	0.04685	0.01396
18	—	0.00068
19	0.04192	0.00576
20	—	0.00069
21	0.03793	0.00789
22	—	0.00067
23	0.03463	0.00068
24	—	0.00030
25	0.03186	0.00853
26	—	0.00027
27	0.02950	0.00784
28	—	0.00011
29	0.02746	0.00288
30	—	0.00022
31	0.02569	0.00346
32	—	0.00032
33	0.02413	0.00888
34	—	0.00055
35	0.02276	0.00658
36	—	0.00045
37	0.02153	0.00283
38	—	0.00066
39	0.02042	0.00327
40	—	0.00045



Model		PAA300F-12	Testing Circuitry Figure A
Item		Condensation 結露特性	
Object		+12V27A	

1. Condensation test

Testing procedure is as follows.

- ① Keeping and cooling the unit in a tank at -10°C for an hour with the input off.
- ② Taking it out of the tank and dewing itself in a room where the temperature is 25°C and the humidity is 40%RH.
- ③ Testing electrical characteristics of the unit to confirm there be no fault.
- ④ Repeating ①, ② and ③ three times.

1. 結露特性試験

入力を切った状態で、恒温槽で-10°Cに冷却しておき、約1時間後に恒温槽から取り出し、室温25°C、湿度40%RHの状態におき結露させ、その電気的特性の測定を3度行い、異常のないことを確認する。

2. Values

	Times	Output Voltage [V]	Ripple Voltage [mV]	Ripple Noise [mV]
Load 50%	1	12.061	40	45
	2	12.061	40	45
	3	12.061	40	45
Load 100%	1	12.060	40	60
	2	12.060	40	60
	3	12.600	40	60

Input Volt. 200 V



Model		PAA300F-12	Testing Circuitry Figure B
Item		Leakage Current 漏洩電流	
Object		_____	

1. Results

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 200 [V]	Input Volt. 264 [V]
(A) DENTORI	—	—	—
(B) UL	—	—	—
(C) C S A	—	—	—

Standards	Leakage Current [mA]		
	Input Volt. 170 [V]	Input Volt. 220 [V]	Input Volt. 264 [V]
(D) V D E	0.29	0.37	0.45

2. Condition

Leakage current value is concluded after measuring both phases of AC input and by choosing the larger one.

交流入力 of 両相について測定し、その大きい方を漏洩電流測定値とする。

Load 100 %



Model		PAA300F-12	Testing Circuitry Figure C
Item		Line Noise Tolerance 入力雑音耐量	
Object		+12V27A	

1. Results

Pulse Width [n S]	MODE	Operating Point of Overvoltage Protection [V] 過電圧保護動作値	DC-like Regulation of Output Voltage 出力電圧の直流的変動
50	COMMON	15.43	no regulation
	NORMAL	15.43	no regulation
1000	COMMON	15.44	no regulation
	NORMAL	15.44	no regulation

Conditions

Input Voltage : 200 V
 Pulse Voltage : 2000 V
 Pulse Cycle : 10 mS
 Pulse Input Duration: 1 min. or more
 Load : 100 %



COSEL	
Model	PAA300F-12
Item	Conducted Emission 雑音端子電圧
Object	_____

Testing Circuitry Figure D

1. Graph

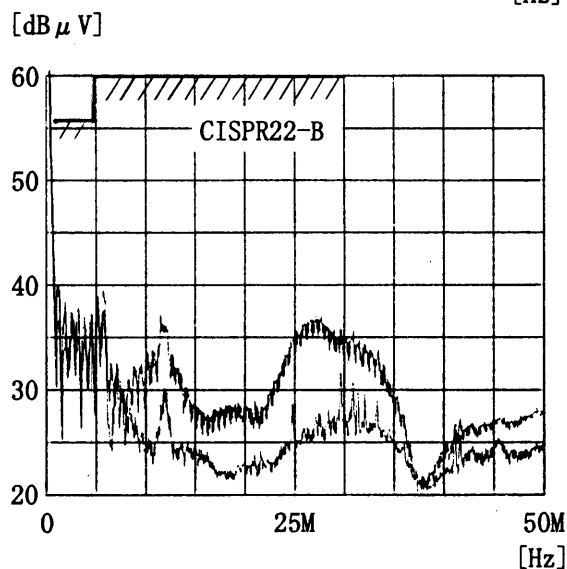
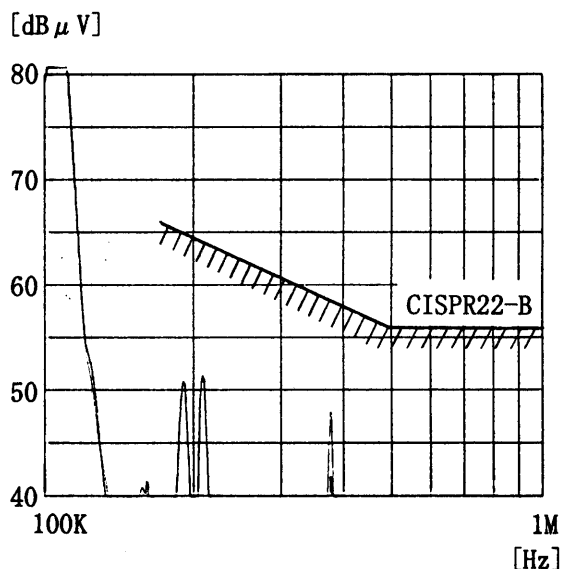
Remarks

Input Volt. 230 V
Load 100 %

Note: Slanted line shows the range of Tolerance.

(注)斜線は許容値を示す。

NO	Standards	Standards Complied	Frequency [MHz]	Tolerance [dB/μV]
1	FCC Class A		0.45~1.6	60
			1.6~30	69.5
2	FCC Class B		0.45~30	48
3	VCCI -1		0.15~0.5	79
			0.5~30	73
4	VCCI -2		0.15~0.5	66-56
			0.5~5	56
			5~30	60
5	VDE Class A		0.01~0.15	91-69.5
			0.15~0.5	66
			0.5~30	60
6	CISPR22 Class B	○	0.15~0.5	66-56
			0.5~5	56
			5~30	60



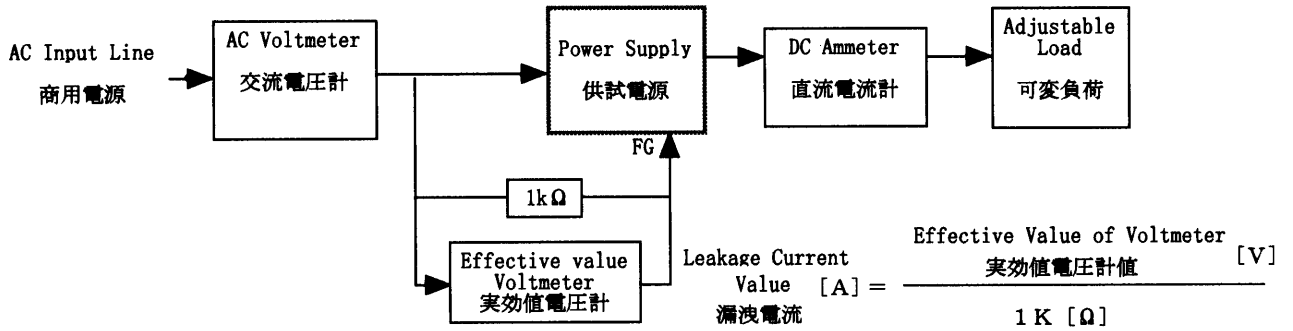
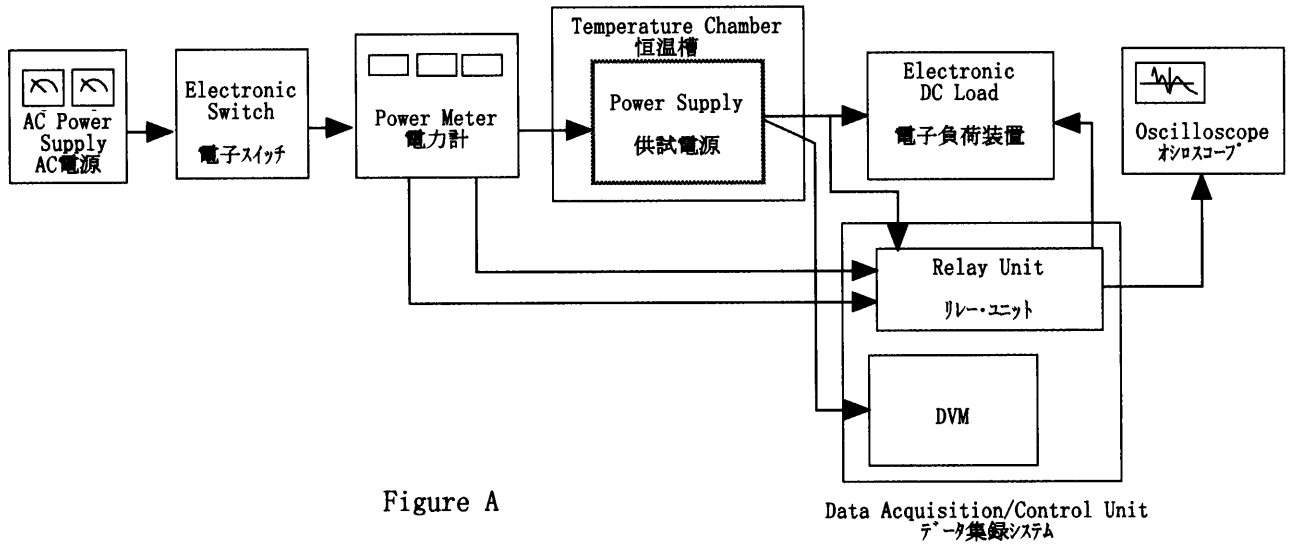


Figure B (DENTORI)

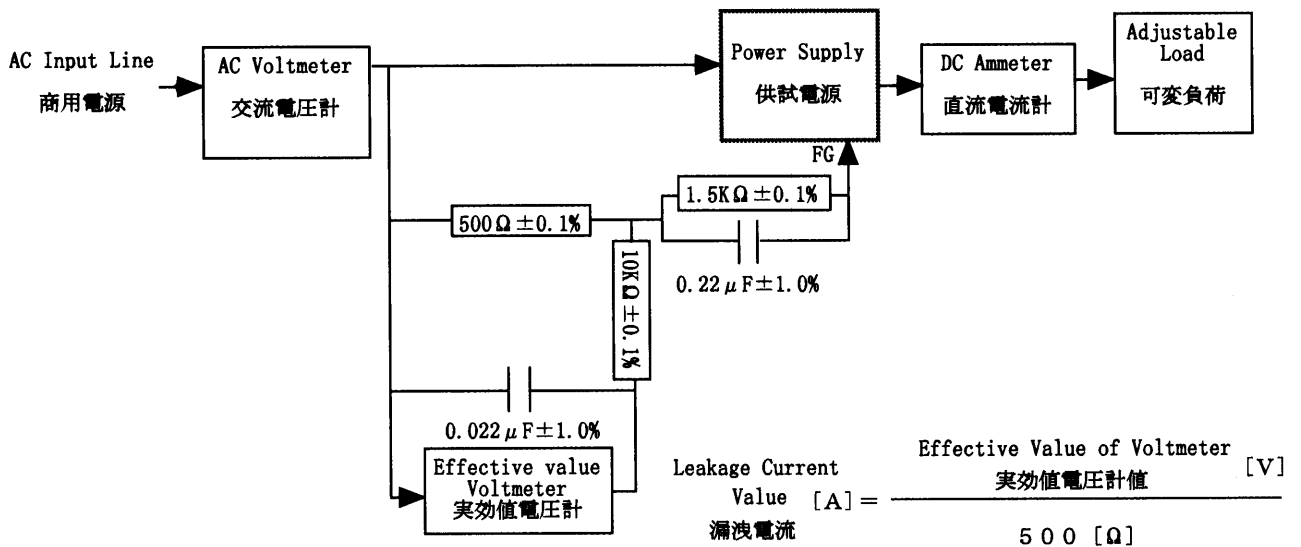


Figure B (UL, CSA, VDE)

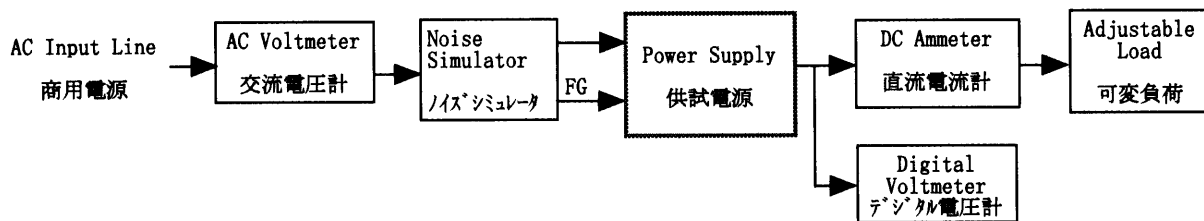


Figure C

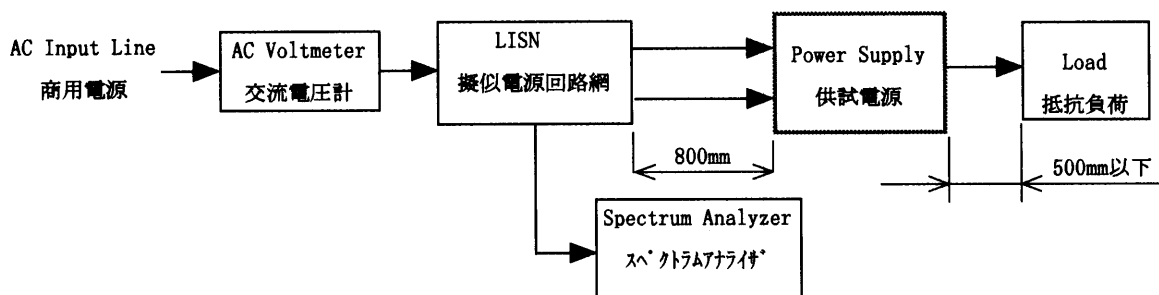


Figure D

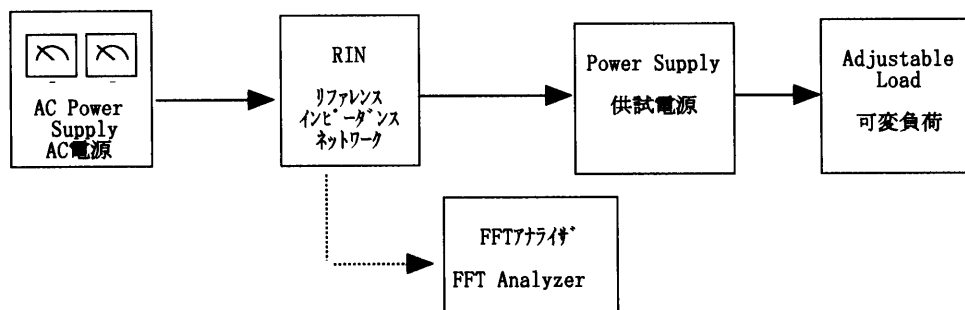


Figure E